

Serial No.: 10/722,366

AMENDMENTS TO THE DRAWINGS

Please amend Figure 3 as provided in the replacement sheet. No new matter is presented.

REMARKS

Claims 1-4 are now pending in the application. The above amendments and the following remarks are considered by Applicants to overcome each rejection raised by the Examiner and to place the application in condition for allowance. An early Notice of Allowance is therefore requested.

The drawings are objected to for failing to show every feature recited in the claims. Specifically, the Examiner indicates that the distributor 15 must be referenced in the drawings. Figure 3 is amended to illustrate the metering means distributor 15. In view of the amendment to Figure 3, Applicants request the withdrawal of the objection to the drawings.

Claims 1-4 are objected to for containing informalities. Claims 1-4 are amended to more clearly recite the features of the claimed invention. No new matter is presented. Therefore, Applicants request the withdrawal of the objection to claims 1-4.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claim 4 is amended to overcome the cited rejection. Therefore, Applicants request the withdrawal of the rejection of claim 4 under 35 U.S.C. 112.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (U.S. Patent No. 6,983,636). The Examiner takes the position that Johnson teaches or suggests all the features recited in claims 1-3. Applicants respectfully disagree.

Johnson is directed to a universal calibration apparatus and method to estimate the dispense output from a low volume, non-contact, liquid dispensing systems that may be applied for every hardware configuration. Specifically, Johnson discloses a liquid handling system that includes a pressure subsystem, a fluid aspiration subsystem, a fluid dispensing subsystem and a fluid switching subsystem.

It is submitted that Johnson does not teach or suggest all the features recited in claims 1-3. Specifically, Johnson does not teach or suggest a flow sensor (10) with a vessel filled with a fluid and the paths between the inlet and the outlets of the distributor exhibit the same fluidic resistance as well as a pressure source to produce overpressure in the vessel. In other words, Johnson does not teach or suggest a flow sensor that is integrated in the dispensing device and which detects the volume flowing through it and uses this as a regulating quantity of the opening times of the valves. Thus, it is not the volume actually dispensed that is measured, but rather the volume which flows through the connection leading to the valve

during the time in which the valve is opened. As a result, the arrangement provided in the claimed invention allows a user to calibrate the device without external calibrating means.

In contrast to the claimed invention, Johnson describes a multichannel dispensing device that is calibrated by an external calibrating means. Johnson discloses that the volume actually dispensed is measured, particularly by gravimetric or spectrometric measurement methods. (See Column 3 Lines 59-63 and Column 4, Lines 42-55). Although Johnson discloses a vessel that is filled with liquid which is connected to valves by a distributor, Johnson does not provide a flow sensor that is arranged at the input of the distributor, nor does Johnson teach or suggest that the connections in the distributor between the flow sensor and the individual valves have identical fluidic resistance. The arrangement of the flow sensor provides the advantage of having identical fluidic resistance which is neither taught nor suggested by Johnson. It should be noted that Johnson does not require this feature since the dispensed volume is measured by an external measuring device. Thus, it is respectfully submitted Johnson does not teach or suggest integrating a flow sensor in the fluidic system as provided in the claimed invention.

In contrast Johnson discloses a flow sensor that is arranged downstream of the dispensing nozzle. Thus, the flow sensor as provided in Johnson is arranged outside the dispensing device. Therefore, it is submitted Johnson fails to teach or suggest all the features recited in claim 1. Specifically, Johnson fails to teach or suggest a fluid and paths between the inlet and a plurality of outlets of the distributor exhibit the same fluidic resistance as well as a pressure source to produce overpressure in the vessel. Therefore, Applicants request the withdrawal of the rejection of claim 1 under 35 U.S.C. 102(b).

Claims 2 and 3 are dependent upon claim 1. It is submitted that claims 2 and 3 recite patentable subject matter for at least the reasons mentioned above. Therefore, Applicants request the withdrawal of the rejection of claims 2 and 3 under 35 U.S.C. 102(b).

For the reasons presented above, claims 1-4 all the claims pending in the application, are believed by Applicants to define patentable subject matter and should be passed to issue at the earliest possible time. A Notice of Allowance is requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gerald H. Kiel", written over a horizontal line.

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